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I to the Annual Report for 1874-75 of the Commission for the Scientific Investigation of the German Sea at Kiel. These reports are of much scientific and practical value, and it would be very desirable if the United States Government could have similar work done in connection with the Coast Survey.

—Mr. Julius Stoezzer, of the National Museum at Washington, died on the 13th of May, aged thirty-four years, leaving a wife and child. Mr. Stoezzer, at the time of his death, was unquestionably the most thoroughly trained and really scientific taxidermist in the country. A pupil of the celebrated Martin, a good comparative anatomist, an enthusiast in his profession; his very skeleton frames of boards and hoop-iron had more life and action in them than the completed inflations we are generally asked to call stuffed animals. The magnificent group of fur seals, now at the Centennial Exhibition, is one of his masterpieces, and is unequaled in any part of the world so far as those animals are concerned. Mr. Stoezzer's death is regretted by all who knew him, and it is felt that with him an artist as well as a preparator has passed away, who can hardly be replaced.

PROCEEDINGS OF SOCIETIES.

PHILOSOPHICAL SOCIETY OF WASHINGTON. — April 22. Major J. W. Powell read a paper on monoclinical folds in orographic geology, tending to show that the higher the strata were elevated above the general surface, the greater the proportional rapidity of their denudation or erosion. He also showed how by unequal elevation on two sides of a fault and general erosion, beds of unequal age might be brought into such close proximity as to lead to errors in identification. This was illustrated by the case of the Green River beds, referred by Cope, Lesquereux, and Hayden to different horizons as a whole, from specimens gathered from apparently identical strata within a few hundred yards of each other. While each investigator had rightly referred the organic remains submitted to his examination to their proper horizon, the error, according to the speaker, had arisen from supposing that the adjoining and apparently identical beds were really continuous; when, actually, faulting had taken place on three cross lines of fracture, with differing elevation and uniform erosion, thus bringing into almost exact parallelism, beds of different age.

A discussion followed in which the question of the thickness of the earth's crust was debated. Mr. Taylor, Major Powell and others, finding it difficult to reconcile the multifarious changes of level of small areas with a crust of great thickness, while Captain Dutton regarded a solid nucleus with a hydrothermal plastic layer between it and the outer crust as meeting the requirements of the case.

CAMBRIDGE ENTOMOLOGICAL CLUB. — March 10. Mr. Burgess de-

scribed some appearances in the pupæ of *Eudamus Tityrus*, by which he thought it might be possible to know the sex of the pupæ.

Mr. Mann described some great variations in the appearance of larvæ which afterwards produced female imagos of *Anisopteryx pometaria*.

Mr. Scudder referred to the presence of *Gryllus domesticus* in several parts of the country, into which it had been introduced from various parts of Europe. He had not succeeded in an attempt to naturalize the species in Cambridge, the specimens which he had, that had come to Boston from some undetermined source, in an East India merchant-vessel, having been destroyed by accident.

Upon the table lay an Entomologists' Bulletin in manuscript, which had been prepared by Mr. Mann, and contained the addresses of about three hundred North American entomologists, with a notice of the special pursuits of each, when known, and such other information of a similar kind as would be of interest to entomologists. This Bulletin was open to the inspection of all who wished to see it, and all were requested to communicate to Mr. Mann such information as would enlarge and freshen this record.

April 14, 1876. Dr. Hagen gave a very interesting account of the mode of gathering, and of some of the properties of amber.

Mr. Scudder exhibited specimens of *Cyaniris lucia*, *C. violacea*, *C. neglecta*, and *C. pseudargiolus* to illustrate a paper which he read, showing that these so-called species are probably only forms of one species, which must retain the name of *Cyaniris pseudargiolus*.

Dr. Hagen gave some information about an insect allied to *Mantispa* (but possessing an ovipositor), which he had lately received from Lieutenant Wheeler's Expedition, as having been caught at Fort Tejon, Southern California. This is the more interesting, as no Hemerobina, except its congeners and the species of the genus *Dila*, possess an ovipositor. The insect lives in wasps' nests.

Mr. Scudder said that in working up the Forficularians of North America, he had detected thirty-eight species; there are undoubtedly many more, especially in Mexico. Only fourteen species are found in the United States and only nine of these are indigenous. Mr. Scudder has prepared a synoptical table of the United States species for publication in *Psyche*.

Mr. Austin said that on the 26th of March he obtained at least twenty-eight species of Dytiscidæ in a small clay pit which had become filled with water. Some of the species occurred in immense numbers. Dr. Hagen suggested that the absence of fishes would account for the great abundance of these beetles.

ACADEMY OF SCIENCES, St. Louis.—May 1. Mr. Riley made a communication on the oviposition of *Leucania unipuncta*, or the Army-Worm Moth.

In his eighth Annual Report, the last forms of which were going

through the press, he had remarked that "at first view it seems singular that the eggs of an insect that appears in such countless myriads from Maine to Georgia, and from Virginia to Kansas, should have remained undiscovered either by farmers or entomologists. One of the obstacles that have stood in the way is, that, as soon as the worms have increased so prodigiously as to attract attention, their natural enemies become so multiplied that a very small per cent. of the worms entering the ground issue again as moths. A second reason is that during the season when the insect is not numerous, and attracts no attention, no one thinks of searching for the eggs. A third reason is that the moths that are reared indoors do not oviposit in confinement. I venture to suggest a fourth possible reason that has hitherto occurred to nobody: it is that the eggs are for the most part secreted where they are not easily seen."

Structure is a trustworthy guide to habit, and Mr. Riley had been led to this last conclusion by a study of the structure of the ovipositor of the moth in question. The time, place, and manner of oviposition in this species is quite important from the economic point of view, as the insect may readily be destroyed in the egg state by fire, if the conclusions drawn were correct.

Mr. Riley had recently been able to verify the correctness of his conclusions by direct observation, having witnessed the mode of oviposition on blue grass. The eggs are, as he surmised, secreted, being either glued in rows of from five to twenty in the groove which is formed by the folding of the terminal grass-blade, or in between the sheath and the stalk. More rarely they are pushed into crevices in the ground, especially at the base of the grass-stalk. The eggs are white, slightly iridescent, spherical, and only $\frac{1}{16}$ of an inch in diameter. They are fastened to each other and to the leaf, and covered along the exposed portion by a white, glistening, viscid substance. As they mature the color becomes more sordid or yellowish, and by the seventh day after deposition the brown head of the embryo shows distinctly through the shell. The larva hatches from the eighth to the tenth day, measures 1.7 mm. in length, is dull, translucent-white in color, with a large brown-black head, and is a looper, the two front pair of abdominal prolegs being atrophied. On account of its extremely small size and of the color resembling the pale bases of the grass-stalks near the ground, it is almost impossible to find them even where there are dozens to the square foot.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA. — March 21. Dr. Leidy called attention to a fragment of the lower jaw of a mastodon found on the Amazon by Dr. Isaac S. Coates, of Chester. The species was determined to be *Mastodon andium*.

Mr. Meehan spoke of the phenomenon of natural inarching among trees. He described and explained such an occurrence in the case of a hemlock growing in the neighborhood of Germantown.

Professor Cope placed on record a new type of insectivorous mammals. It is allied to the extinct rodent-like forms from the Bridger beds,

which are characterized by a prolonged growth of the incisors, having enamel only on one side. The incisors in the form under consideration have enamel on the front and back, but not on the side. The characters of the other teeth were given as they exist in the genera *Calamodon* and *Ectogamus*, in each of which two species are known. The relationship established by these genera between the Edentata and the other mammalia was alluded to. These forms are both from the Wasatch beds of New Mexico. The name *Tæniodonta* was proposed for the group indicated.

Dr. Koenig called attention to a mineral, probably tantolite, from North Carolina. The distinction between columbite and tantolite is difficult to determine. The peculiarities discovered by analysis were described at length and the distinctive characters indicated. Its specific gravity is 5.8.

April 4th. Prof. Burt G. Wilder, of Cornell University, made a communication upon the anatomy and development of the brain in fish-like vertebrates. After considering the taxonomic value of the brain, he spoke of the investigations of Huxley, Owen, and the continental naturalists, dwelling particularly upon the causes of the great inaccuracy in the figures of fishes' brains contained in the text-books. He had endeavored to ascertain how far the brains of fishes might be homologized with the typical brain described and figured in diagram by Huxley. The differentiation of the three typical cerebral vesicles was described, and the fact stated that while the typical description applies to all the higher vertebrate brains, neither the lateral ventricles nor the foramen of Munroe had been observed in the brains of fishes until recently found by Professor Wilder in the gar-pike. He had since found them in the lamprey and the hag-fish, in several sharks and skates, in sturgeons, in the spoon-bill sturgeon, in the mud-fish or *Amia*, and in several typical bony fishes. He showed in what way the nearly solid front mass of the adult shark's brain is formed from a thin-walled vesicle in the embryo. The structure of the brain in ganoids and teleosts was described, and the distinction indicated that in the latter, although the lateral ventricles and the foramen of Munroe are present, they are so small as to be almost invisible. We are forced back, therefore, in searching for the distinctive character of the ganoid brain, upon the chiasma of the optic nerves of Müller. In considering the taxonomic value of these characters, the belief was expressed that the structure of brains will be found to be less dependent upon external modifying circumstances than are other parts of the animal organization.

In conclusion, Professor Wilder exhibited and described the brain of *Chimæra*, and indicated its relations to the other groups spoken of. He regarded the brain as presenting characters intermediate between the sharks and skates, the ganoids and the batrachians with *Lepidosteus*.

Professor Cope called attention to the entire novelty of certain of the observations made by Professor Wilder, and suggested the direction of

further investigation of the subject, expressing the belief that the chiasma of the optic nerves would yet be found in the lowest of the typical bony fishes.

Professor Koenig placed on record an analysis of garnet from Yancey County, North Carolina. Mr. Roberts announced the finding of uranite at Wayne Station, Germantown.

Mr. Mather, Superintendent of the Centennial Aquaria, submitted for the inspection of the members living specimens of the grayling and a species of *Campostoma*, upon which explanatory remarks were made by Professor Cope.

Mr. Mather called attention to a fungus growing upon the *Campostoma*, which, he stated, would sooner or later prove fatal. Dr. Leidy explained that the growth mentioned was the *Achyla prolifera* of botanists, and described its development. Dr. Koenig suggested the application of salicylic acid for the destruction of the fungous growth. The president and Professor Frazer further spoke of the properties of salicylic acid.

Mr. A. H. Smith and Mr. Thaddeus Norris described the habits of a species of game fish inhabiting the Saginaw River.

ACADEMY OF SCIENCE, St. Louis. — April 3d. Professor Potter, Chairman of the Committee on Mound Exploration, made a partial report, as follows: The committee have examined and made a survey of five groups of mounds. Two hundred specimens of pottery have been obtained, of which one hundred and twenty-six are quite perfect, the remaining specimens being in a fair condition, and may be wholly or in part restored. The collection also embraces the skulls of twenty individuals, of which number one is complete, seven nearly so, the remaining twelve being in fragments of sufficient size to be of value. They have also obtained the leg and arm bones, and in some cases the vertebrae and other small bones, representing twelve individuals.

Mr. Theo. P. Gillespie, a gentleman recently arrived from Peru, was introduced to the members by Dr. Briggs, and exhibited a beautiful collection of pottery taken from the burial grounds of an ancient tribe of Peruvians. The graves from which the specimens were taken were in very dry drift sand near the sea-beach. The graves are supposed to belong to a tribe that was conquered by the Incas fifty or sixty years before the advent of Pizarro in Peru. Many bones were found, being preserved by the perfect dryness of the sand in which they were buried. The greater portion of these relics were found along the line of the Chinbote and Huaraz Railroad, latitude 7° S., and with few exceptions they represent what are supposed to have been drinking-vessels. In several of the specimens the handle, which is hollow, arches over the top of the vessel, the two branches of the tube uniting in a single vertical tube of several inches in length. The ornamentation, both in form and color, was in many cases very striking and expressive. A small

mold of strongly-baked clay, — the negative of a human face, — containing within it the figure which it was designed to reproduce, was shown. The collection contains twenty-seven specimens. Three specimens of copper were also exhibited, namely, a finger-ring, a long needle with an eye, and a chisel with a smooth edge and battered head.

THE APPALACHIAN MOUNTAIN CLUB, Boston. — April 12th. Mr. S. H. Scudder read a paper on The Correct Name of the Mountain called Pequawket or Kiarsarge, which was followed by considerable discussion, in which Mr. Emery, of Exeter, N. H., quoted from a journal of Samuel Willard, an old scout, written in 1725, to prove that the country round about was formerly called Pequawket, and that should be the proper name of the mountain. Mr. George Fox argued that while this was a name of the territory, it should not be applied to the mountain at all. Mr. J. B. Henck, Jr., who has made a partial map of the mountain region, read a paper on The Construction of a New Map of the White Mountains. Mr. Warren Upham read a paper on The East Branch of the Pemigewassett, which he had visited the past summer; and Prof. E. C. Pickering made a communication on Professor Bond's Manuscripts relating to the White Mountains.

The first field meeting of the club will be held at North Conway, N. H., on the fourth Wednesday in July.

SCIENTIFIC SERIALS.¹

ARCHIV FÜR MIKROSKOPISCHE ANATOMIE. — On the Pulsating Ventral Sinus of Insects, by V. Graber. Comparative Developmental History of *Comatula mediterraniensis*, by Alex. Goette.

PETERMANN'S GEOGRAPHISCHER MITTHEILUNGEN. — March 21st. Cernik's Expedition through the Region of the Euphrates and Tigris. April 5th. Cameron's Journey across Africa, by E. Behm. Journey in New Zealand. Swedish, Russian, and Dutch Journeys to West Siberia.

ANNALS AND MAGAZINE OF NATURAL HISTORY. — June. Notes on Otto Hahn's Micro-Geological Investigation of *Eozoön Canadense*, by W. B. Carpenter. On the Identity in Type of the Annelids and Vertebrates, by C. Semper.

AMERICAN JOURNAL OF SCIENCE AND ARTS. — June. The Geological Survey of Brazil, by C. F. Hartt. On a New Sub-Order of Pterosauria, by O. C. Marsh. Notice of New Odontornithes, by O. C. Marsh. — July. The Colorado Plateau Province as a Field for Geological Study, by G. K. Gilbert. On a Disease of Olive and Orange Trees occurring in California in the Spring and Summer of 1875, by W. G. Farlow.

¹ The articles enumerated under this head will be for the most part selected.